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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/731,738	12/08/2000	Soon Ho Choi	2658-0247P	1195

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EXAMINER	
DEO, DUY VU NGUYEN	

ART UNIT	PAPER NUMBER
1765	

DATE MAILED: 10/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/731,738	CHOI ET AL.	
	Examiner	Art Unit	
	DuyVu n Deo	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-12* is/are rejected.

7)☒ Claim(s) *8* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Kinose (JP 10-022358).

US 5,915,396 is considered to be an accurate translation of JP 10-22358, which is the patent number of the JP document 8-170204. A translation of JP 10-022358 will be provided upon applicant's request.

Kinose describes an apparatus comprising: an UV cleaner, and transportation robots 10 or 11 movable mounted on the guide rails (claimed conveyor or in-line conveying) to transport substrate to and from the UV cleaner to another chamber (figures 4, 6, and 10; col. 5, line 55-col. 6, line 12).

Referring to the limitations of the UV cleaner for cleaning the alien substance remaining on the substrate after developing the mask pattern and a conveyor of in-line conveying the substrate to and from the UV for wet etching, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152

USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). Kinose's structure are capable of performing claimed intended use.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2, 4-7, 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinose and admitted prior art.

Unlike claimed invention, Kinose doesn't describe an apparatus that include both the UV cleaner and a wet etching unit. However, his apparatus is capable of providing both the UV and a wet etching unit because he teaches that processing units 5 and 6 would include UV cleaner, and chemical solution for cleaner (col. 5, line 55-65). He also teaches additional units can be added (col. 8, line 15-18) and the units of apparatus can be performing any other processes and may be arranged in any of various configuration (col. 14, line 36-35). Since a method of processing a LCD including requiring UV cleaner and wet etching is well known to one skilled in the art, as described in pages 1-3 of the specification, it would be obvious to one skilled in the art to modify Kinose's apparatus by including units such as UV cleaner and wet etching because as well known to one skilled in the art (shown in page 3 of specification) that it cost more time to move substrate to different apparatus for different step; therefore, it is more efficient to have all the steps of processing a substrate to be done within an apparatus including UV cleaner and wet

etching units. Further, by eliminating moving of substrate from apparatus to another would reduce contamination on the substrate during transferring.

Referring to claims 2 and 7, since the transportation robots 10 and 11 are for transferring substrate, they would have to be for transferring substrate to and from the UV cleaner or transferring substrate from UV cleaner to the etching unit.

Referring to claims 4, 5, 10, 11, admitted prior art also describe processing an LCD substrate including electrode terminals and wires (pages 1 and 2).

Referring to claim 9, it would be obvious to have a transporter or conveyor between the UV cleaner and the etching unit so that wafers can be transferred from one unit to another.

Referring to claims 12 and 18, Kinose also describes units such as a spin scrubber for washing substrate with water, a spin dryer for drying wafer (col. 8, line 45-48) and having other units including a tilt drain part, a de-ionized rinse part would be obvious as taught by admitted prior art in order to process an LCD with a reasonable expectation of success. Any prior art that reads on claim 1 would also read on claim 18 because it doesn't have any other apparatus limitation accepts ones that are cited in claim 1.

Claim Rejections - 35 USC § 103

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinose and admitted prior art as applied to claim 1 above, and further in view of Kizaki et al. (US 5,763,892).

Unlike claimed invention, above prior art doesn't describe an excimer UV light. Kizaki describes an UV irradiator for substrate treatment system such as an LCD using an excimer UV

light (col. 1, line 15-26; col. 8, line 17-22). It would be obvious for one skilled in the art to use an excimer UV light in light of Kizaki for wafer treatment because Kizaki teaches that it can be stabilized in an extremely short time after being turned on (col. 8, line 20-21).

Allowable Subject Matter

6. Claim 8 remains allowable.

Response to Arguments

7. Applicant's arguments filed 7/16/03 have been fully considered but they are not persuasive.

In response to applicant's argument that Kinose doesn't describe a cleaning apparatus used for wet etching or neither Kinose and admitted prior art teaches using an UV cleaner for cleaning alien substances remaining on a substrate after developing the mask pattern and the conveyor for conveying the substrate to and from the UV cleaner for wet etching, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Referring to applicant's argument that a concept of cleaning occurs after developing the mask pattern but before the wet etching is not taught by the references, this appears to describe a method but not structure of an apparatus. Therefore, it doesn't have patentable weight in the claims of an apparatus.

The robots for moving the substrates from one chamber to another or to and from the UV cleaner are movable mounted on the guide rails (figure 4, 6, 10; col. 6, line 9-12). This would read on claimed of conveyer for in-line conveying of substrate to and from UV cleaner.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD
October 21, 2003